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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,933	05/31/2001	Tobias W. Walker	02879.P014D	4932

7590

06/28/2002

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,933

Applicant(s)

WALKER ET AL.

Examiner

Tarifur R Chowdhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 06/213 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubota et al (hereinafter Tsubota), PN 5,629,787.

3. Tsubota discloses in column 3, line 60 - column 5, line 42 and shows in figure 5, a liquid crystal display comprising:

- a first substrate 3 having an optically transmissive character;

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- a second substrate 2 positioned adjacent to the first substrate 3 and an active area bordered by a perimeter seal area 4;
 - a plurality of spacers 5 configured about the perimeter seal area 4 of the second substrate 2, wherein the first substrate 3 is separated from the second substrate 2 by the plurality of spacers 5 so as to form a cell gap; and
 - a liquid crystal material 6 positioned in the cell gap between the first substrate 3 and the second substrate 2,
- wherein each of the plurality of spacers are restricted to a location that is outside of the active area.

Tsubota does not explicitly disclose that the second substrate having a reflective character. However, it is notoriously well known in the liquid crystal art to make a substrate reflective in order to obtain a reflective display. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the second substrate reflective in order to obtain a reflective display.

Accordingly, the reference meets all the claimed structure as set forth above. As to the method recited in the claim concerning the steps of providing, configuring, positioning, and etc. of the claimed elements are inherently met by the disclosures.

Accordingly, claim 20 would have been obvious.

4. Claims 20-24 and 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koichi Oguchi (hereinafter Koichi), JP 56-85731 in view of Tsubota.

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5. Koichi discloses in the abstract and shows in Figs. 2 and 3, a liquid crystal display, comprising:

- a first substrate 12 having an optically transmissive character;
- a second substrate 11 positioned adjacent to the first substrate and an active area bordered by a perimeter seal area 13;
- a plurality of spacers configured about the perimeter seal area of the second substrate, wherein the first substrate is separated from the second substrate by the plurality of spacers so as to form a cell gap; and
- a liquid crystal material 16 positioned in the cell gap between the first substrate and the second substrate.

Koichi does not explicitly disclose that the second substrate having a reflective character. However, it is notoriously well known in the liquid crystal art to make a substrate reflective in order to obtain a reflective display. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the second substrate reflective in order to obtain a reflective display.

Accordingly, the reference meets all the claimed structure as set forth above. As to the method recited in the claim concerning the steps of providing, configuring, positioning, and etc. of the claimed elements are inherently met by the disclosures.

Accordingly, claim 20 would have been obvious.

As to claims 21 and 22, Koichi shows in Fig. 4, that the display further comprising cross-over means 17 for communicating directly between the first substrate 12 and the second substrate 11.

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As to claim 23, even though Koichi does not explicitly show the alignment layers, it is common and known in the art to employ alignment layers in a liquid crystal display to align liquid crystal molecules. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ first and second alignment layers in the liquid crystal display device of Koichi to align liquid crystal molecules.

As to claim 24, depositing a conductive coating without patterning on a bottom surface of a substrate is common and known in the liquid crystal art. Further, it is desirable in the liquid crystal art to reduce manufacturing steps and thus reduce cost. Therefore, it would have at least been obvious to one of ordinary skill in the art at the time of the invention was made to deposit the conductive coating without patterning on the bottom surface of the substrate of Koichi to optimize device performance and in order to reduce cost.

As to claims 27-31, positioning two substrates using press assembly technique such as: aligning the substrates between a first plate and a bladder of a second plate, placing a shim plate of flexible material between a bladder and the one of the substrates and inflating the bladder, and etc. is known in the art and thus would have been obvious to avail a proven technology.

As to claims 32 and 33, positioning two substrates by using a bag full of gas and evacuating the gas by drawing a vacuum in the bag is common and known in the art and thus would have been obvious to avail a proven technology.

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Note: It should be noted that the method of positioning the substrates described in claims 27-31 and 32-33 are considered as obvious variations and thus are not patentably distinct. If applicant disagree with Examiner's position, applicant is respectfully reminded that a restriction between claims 27 and 32 might be proper.

6. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koichi Oguchi (hereinafter Koichi), JP 56-85731 in view of Tsubota.

Koichi does not explicitly disclose that each of the plurality of spacers are restricted to a location that is outside of the active area. However, Tsubota discloses in column 5, lines 28- 38 that by eliminating spacers from the active area, it is possible to realize a display with no pixel defect, large in size, high contrast and high quality. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to restrict the spacers of Koichi to a location that is outside of the active area in order to obtain a display with high contrast and high quality. Further, coating the plurality of spacers with a sealing material is common and known in the art and thus would have been obvious to optimize device performance.

Accordingly, claims 25 and 26 would have been obvious.

Conclusion

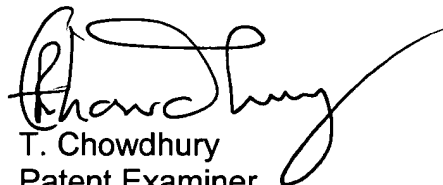
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (703) 308-4115. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 305-4842. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



T. Chowdhury
Patent Examiner
Technology Center 2800

TRC
June 27, 2002